

REMARKS

Claims 1-19 are pending in this application. In view of the following remarks, reconsideration and allowance of claims 1-19 are respectfully requested.

35 U.S.C. §103(a) Rejections

Claims 1-3

Claims 1-3 were rejected under 35 U.S.C. §103(a) as allegedly having been obvious over Aldrich (U.S. Patent No. 6,008,164) in view of Deckman (U.S. Patent Application Publication No. 2003/0158055). Applicants respectfully traverse this rejection.

The lubricant base oil of claim 1 consists essentially of a normal paraffin and an isoparaffin, and satisfies the requirements: (a) an average carbon number N_c in one molecule is not less than 29 but not more than 35; (b) an average branch number N_b in one molecule, which is derived from a ratio of CH_3 carbon to total carbon determined by ^{13}C -NMR analysis and the average carbon number N_c in one molecule, is not more than $(0.2N_c - 3.1)$ but not less than 1.5; and (c) a viscosity index is 145-170 and a kinematic viscosity at 40°C is 17-25 mm^2/s .

The Examiner alleges that Aldrich describes all of the features of claim 1 except above requirements (a) and (b) and the kinematic viscosity at 40°C being 17-25 mm^2/s , as recited in claim 1. The Examiner alleges that Aldrich describes ranges that overlap or lie inside the ranges recited in above requirements (a) and (b) of claim 1 and that Deckman describes the kinematic viscosity recited in claim 1. However, for at least the following reasons, the combination of Aldrich and Deckman would not have rendered obvious claim 1.

Based upon Aldrich and Deckman, there is no reason or rationale for one of ordinary skill in the art to have come to the specific combination of above requirements (a), (b) and (c), recited in claim 1.

The Viscosity Index Recited In Claim 1 Is Not Described In The References

Aldrich does not describe the specific range of viscosity index recited in claim 1.

Aldrich describes that a viscosity index of the base oil is at least about 120. See claim 4 of Aldrich. Aldrich does not describe any specific viscosity index above the 120 threshold.

Deckman also does not describe a lubricant base oil having a viscosity index in the range of 145-170. Deckman describes a maximum viscosity index of the base oil is 138. See Table 3 of Deckman. The highest viscosity index of Deckman is thus lower than, and outside, the range of 145-170 recited in claim 1.

Thus, if combined, the combination of Aldrich and Deckman would not have yielded the claimed viscosity index of 145-170, because Deckman has a maximum viscosity index of 138 and Aldrich merely describes a viscosity index that is at least 120, which are both lower than and outside the claim range of 145-170 recited in claim 1.

The Kinematic Viscosity Recited In Claim 1 Is Not Described In The References

Above requirement (c) of claim 1 requires that the lubricant base oil have a viscosity index of 145-170 and a kinematic viscosity at 40°C of 17-25 mm²/s. The combination of Aldrich and Deckman would not have rendered obvious this feature of claim 1.

The Patent Office admits that Aldrich does not describe a kinematic viscosity at 40°C that is 17-25 mm²/s. The Patent Office relies upon Deckman as allegedly remedying this deficiency of Aldrich. However, Deckman does not remedy this deficiency of Aldrich for at least the following reasons.

Deckman describes a paraffinic oil that is a hydrotreated oil having a viscosity of approximately 22.7 cSt at 40°C. See paragraph [0107] of Deckman. Deckman describes that the hydrotreated oil having a viscosity of 22.7 cSt at 40°C also has a viscosity index of 116. See Table 3 of Deckman.

Thus, if the hydrotreated oil having a viscosity of approximately 22.7 cSt at 40°C were to have been combined with Aldrich, the resulting base oil would have had a viscosity index of 116, which is below the claim range of 145-170 recited in claim 1.

Additionally, neither Aldrich nor Deckman describe the specific relationship of Nc (average carbon number) and Nb (average branch number) required to get the appropriate viscosity index that achieves the excellent lubricant base oil of claim 1. Aldrich and Deckman describe divergent oils with divergent properties. There is no reason or rationale for one of ordinary skill in the art to have combined the hydrotreated oil of Deckman with the base oil of Aldrich and somehow have come to the relationship of Nc, Nb and viscosity index recited in claim 1.

Further, one of ordinary skill in the art would not have had any reason or rationale to have combined the hydrotreated oil of Deckman with the lubricant base oil of Aldrich. As discussed above, Deckman describes that the hydrotreated oil having a viscosity of 22.7 cSt at 40°C also has a viscosity index of 116. See Table 3 of Deckman. Thus, the viscosity index of the hydrotreated oil of Deckman is outside the required minimum of 120 described by Aldrich.

Additionally, the oil described by Deckman is a mineral oil and is not derived from a synthetic paraffin wax. In other words, the structure of the hydrotreated oil of Deckman is very different from the structure of the lubricant base oil of claim 1 that consists essentially of a normal paraffin and an isoparaffin.

Conclusion

In view of the above, the combination of Aldrich and Deckman would not have rendered obvious claim 1. Claims 2-3 depend from claim 1. For at least their respective dependency, and for the additional features recited, the combination of Aldrich and Deckman also would not have rendered obvious claims 2-3.

In view of the above, withdrawal of the rejection is respectfully requested.

Claims 4-19

Claims 4-19 were rejected under 35 U.S.C. §103(a) as allegedly having been obvious over Aldrich in view of Deckman and further in view of Wittenbrink (U.S. Patent No. 6,506,297). Applicants respectfully traverse this rejection.

Wittenbrink does not remedy the above described deficiencies of Aldrich and Deckman. Wittenbrink does not describe, or provide any reason or rationale for one of ordinary skill in the art to have come to, a viscosity index of 145-170 and a kinematic viscosity at 40°C of 17-25 mm²/s, as recited in claim 1. Thus, the combination of Aldrich, Deckman and Wittenbrink would not have rendered obvious claim 1.

Claims 4-19 depend from claim 1. For at least their respective dependency, and for the additional features recited, the combination of Aldrich, Deckman and Wittenbrink also would not have rendered obvious claims 4-19.

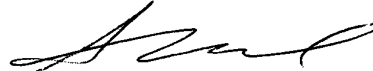
In view of the above, withdrawal of the rejection is respectfully requested.

Concluding Remarks

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1-19 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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